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node near10 (link adj1 device) near10 (config\$7 adj1 ROM)	0

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result set*DB=USPT; PLUR=YES; OP=OR*

L1 node near10 (link adj1 device) near10 (config\$7 adj1 ROM) 0 L1

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node same link same device same config\$7 same ROM

15

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- IBM Technical Disclosure Bulletins

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result set*DB=USPT; PLUR=YES; OP=OR*

<u>L4</u>	node same link same device same config\$7 same ROM	15	<u>L4</u>
<u>L3</u>	node same (link near5 device) same (config\$7 near5 ROM)	0	<u>L3</u>
<u>L2</u>	node same (link adj1 device) same (config\$7 adj1 ROM)	0	<u>L2</u>
<u>L1</u>	node near10 (link adj1 device) near10 (config\$7 adj1 ROM)	0	<u>L1</u>

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Terms	Documents
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side by side**Hit Count** Set Name
result set*DB=PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR*L5 L40 L5*DB=USPT; PLUR=YES; OP=OR*L4 node same link same device same config\$7 same ROM15 L4L3 node same (link near5 device) same (config\$7 near5 ROM)0 L3L2 node same (link adj1 device) same (config\$7 adj1 ROM)0 L2L1 node near10 (link adj1 device) near10 (config\$7 adj1 ROM)0 L1

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Terms	Documents
node same (link or device) same (config\$7 near2 ROM)	29

Database:

Search:

Search History**DATE: Monday, August 04, 2003** [Printable Copy](#) [Create Case](#)**Set Name** **Query**
side by side**Hit Count** **Set Name**
result set*DB=USPT; PLUR=YES; OP=OR*

L1 node same (link or device) same (config\$7 near2 ROM) 29 L1

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Terms	Documents
L1	0

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Set Name Query

Hit Count Set Name

DB=PGPB.JPAB.EPAB.DWPI.TDBD; PLUR=YES; OP=OR

0 L2

DB=USPT; *PLUR*=YES; *OP*=OR

L1 node same (link or device) same (config\$7 near2 ROM) 29 L1

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Terms	Documents
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Database:

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Search:

L3

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Recall Text Clear

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side by side

Hit Count Set Name

result set

DB=USPT; PLUR=YES; OP=OR

<u>L3</u>	((358/1.15)!.CCLS. (370/463)!.CCLS. (709/253 709/301 709/302 709/220)!.CCLS. (710/104 710/105 710/106 710/62 710/63 710/2 710/305 710/8)!.CCLS. (714/1)!.CCLS.)	5307	<u>L3</u>
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*DB=PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR*L2 L10 L2*DB=USPT; PLUR=YES; OP=OR*L1 node same (link or device) same (config\$7 near2 ROM)29 L1

END OF SEARCH HISTORY

EAST - [Untitled1.1]

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- Drafts
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 - L1: (26) node same (link or device)
 - Failed
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 - UDC
 - Queue
 - Trash

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DBs: USPAT Plurals Highlight all hit terms initially

Default operator: OR

Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error	Definition	Err
1	BRS	L1	26	node same (link or device) same (config\$7 adj1 ROM)	USPAT	2003/08/04 15:57			0

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EAST - [Untitled1.1]

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Pending
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L1: (26) node same (link or
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UDC
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DBs USPAT Plurals
Default operator: OR Highlight all hit terms initially
node same (link or device) same (config\$7 adj1 ROM)

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	U	I	Document ID	Issue Date	Pages	Title	Current OR	Current XRef
1	<input type="checkbox"/>	<input type="checkbox"/>	US 6584524 B2	20030624	78	Data transmission apparatus, system and method, and image	710/110	345/503; 358/296;
2	<input type="checkbox"/>	<input type="checkbox"/>	US 6530887 B1	20030311	37	Ultrasound probe with integrated electronics	600/459	
3	<input type="checkbox"/>	<input type="checkbox"/>	US 6529951 B1	20030304	28	Apparatus for transmitting connecting status and method	709/223	370/257; 709/220
4	<input type="checkbox"/>	<input type="checkbox"/>	US 6529522 B1	20030304	27	Communication apparatus with digital interface	370/466	370/401; 370/467
5	<input type="checkbox"/>	<input type="checkbox"/>	US 6526516 B1	20030225	52	Power control system and method for distribution of	713/340	713/330
6	<input type="checkbox"/>	<input type="checkbox"/>	US 6523696 B1	20030225	79	Communication control device for realizing uniform	709/223	709/236
7	<input type="checkbox"/>	<input type="checkbox"/>	US 6512767 B1	20030128	26	Transmission medium connecting device,	370/389	370/241
8	<input type="checkbox"/>	<input type="checkbox"/>	US 6498598 B2	20021224	45	Imaging device system, control method for the	345/156	345/716
9	<input type="checkbox"/>	<input type="checkbox"/>	US 6477589 B1	20021105	80	Information processing apparatus and method	710/18	710/10; 710/19;
10	<input type="checkbox"/>	<input type="checkbox"/>	US 6466549 B1	20021015	11	Broadcast discovery in a network having one or more	370/254	370/257
11	<input type="checkbox"/>	<input type="checkbox"/>	US 6425019 B1	20020723	47	Data communication on a serial bus using an initial	710/11	358/1.15; 710/38

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(node and (link or device)) and ROM

[Search Again](#)**Results:**Journal or Magazine = **JNL** Conference = **CNF** Standard = **STD****1 Multimedia publishing tools for software engineering***Elder, J.; McKeever, D.; McKeever, S.;*Human-Computer Interface Design for Multimedia Electronic Books, IEE Colloq
, 22 Feb 1995

Page(s): 3/1 -3/4

[\[Abstract\]](#) [\[PDF Full-Text \(228 KB\)\]](#) **IEE CNF****2 A new approach for a superconducting RAM memory design***Smith, S.H., Jr.; Krad, H.;*

Southeastcon '90. Proceedings., IEEE , 1-4 April 1990

Page(s): 375 -378, 378a vol.2

[\[Abstract\]](#) [\[PDF Full-Text \(396 KB\)\]](#) **IEEE CNF****3 The superconductive node-pair memory***Smith, S.H., Jr.; Krad, H.;*

Circuits and Systems, 1990., IEEE International Symposium on , 1-3 May 1990

Page(s): 591 -594 vol.1

[\[Abstract\]](#) [\[PDF Full-Text \(392 KB\)\]](#) **IEEE CNF****4 Minimum delay routing in static stochastic networks***Orda, A.; Rom, R.; Sidi, M.;*

INFOCOM '92. Eleventh Annual Joint Conference of the IEEE Computer and Communications Societies. IEEE , 4-8 May 1992

Page(s): 608 -616 vol.2

[\[Abstract\]](#) [\[PDF Full-Text \(688 KB\)\]](#) **IEEE CNF**

5 Competitive routing in multi-user communication networks

Orda, A.; Rom, R.; Shimkin, N.;

INFOCOM '93. Proceedings. Twelfth Annual Joint Conference of the IEEE Computer Communications Societies. Networking: Foundation for the Future. IEEE , 28 M April 1993

Page(s): 964 -971 vol.3

[\[Abstract\]](#) [\[PDF Full-Text \(660 KB\)\]](#) **IEEE CNF**

6 Scheduled hot-potato routing

Naor, J.; Orda, A.; Rom, R.;

INFOCOM '95. Fourteenth Annual Joint Conference of the IEEE Computer and Communications Societies. Bringing Information to People. Proceedings. IEEE , April 1995

Page(s): 579 -586 vol.2

[\[Abstract\]](#) [\[PDF Full-Text \(680 KB\)\]](#) **IEEE CNF**

7 A reconfiguration algorithm for a double-loop token ring local area network

Rom, R.; Shacham, N.;

Computers, IEEE Transactions on , Volume: 37 Issue: 2 , Feb. 1988

Page(s): 182 -189

[\[Abstract\]](#) [\[PDF Full-Text \(704 KB\)\]](#) **IEEE JNL**

8 Competitive routing in multiuser communication networks

Orda, A.; Rom, R.; Shimkin, N.;

Networking, IEEE/ACM Transactions on , Volume: 1 Issue: 5 , Oct. 1993

Page(s): 510 -521

[\[Abstract\]](#) [\[PDF Full-Text \(1056 KB\)\]](#) **IEEE JNL**

9 Minimum delay routing in stochastic network

Orda, A.; Rom, R.; Sidi, M.;

Networking, IEEE/ACM Transactions on , Volume: 1 Issue: 2 , April 1993

Page(s): 187 -198

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A new approach for a superconducting RAM memory design

Smith, S.H., Jr. Krad, H.

Dept. of Comput. Sci., New Orleans Univ., LA;

This paper appears in: Southeastcon '90. Proceedings., IEEE

Meeting Date: 04/01/1990 -04/04/1990

Publication Date: 1-4 Apr 1990

Location: New Orleans, LA , USA

On page(s): 375-378, 378a vol.2

References Cited: 14

IEEE Catalog Number: 90CH2883-7

INSPEC Accession Number: 3956235

Abstract:

A brief background of conventional superconductive random access memories (RAMs) and their drawbacks is given. The original node-pair concept is briefly reviewed, and the principles and operation of a $4.3 \times 10^9 \times 32$ -b superconducting node-pair RAM (which is fully accessed by 1280 decoded address lines and is automatically refreshed after each read/write cycle) are discussed at length. An alternative superconductive circuit design which does not need refreshing after each read/write cycle and is well suited for read-only memory (ROM) operation when a room-temperature superconductor becomes available is discussed.

Index Terms:

random-access storage superconducting junction devices superconducting memory circuit 128 Gbit RAM memory design ROM operation node-pair RAM random access memory read-only memory superconductive circuit design

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L4: Entry 9 of 15

File: USPT

Oct 10, 2000

DOCUMENT-IDENTIFIER: US 6131119 A

TITLE: Automatic configuration system for mapping node addresses within a bus structure to their physical location

Brief Summary Text (7):

Within each of the bus ID and physical ID fields a value of all logical "1"s is reserved for special purposes. Accordingly, this addressing scheme provides for up to 1023 busses, each with 63 independently addressable nodes. Each IEEE 1394 compatible device includes a node unique ID which is a 64 bit number saved within a configuration read-only memory (ROM) of the device. The node unique ID is permanent for each device and does not depend on the position of the device within an IEEE 1394 bus. The node unique ID is not used for addressing of data transmissions on the data link layer.

WEST

L4: Entry 9 of 15

File: USPT

Oct 10, 2000

US-PAT-NO: 6131119

DOCUMENT-IDENTIFIER: US 6131119 A

TITLE: Automatic configuration system for mapping node addresses within a bus structure to their physical location

DATE-ISSUED: October 10, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fukui, Toshiharu	Newport Beach	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Sony Corporation	Tokyo			JP	03
Sony Trans Com, Inc.	Irvine	CA			02

APPL-NO: 08/ 831063 [PALM]

DATE FILED: April 1, 1997

INT-CL: [07] G06 F 11/30

US-CL-ISSUED: 709/224; 709/227

US-CL-CURRENT: 709/224; 709/227

FIELD-OF-SEARCH: 395/200.51, 395/200.5, 709/221, 709/220, 709/224, 709/227

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>5261044</u>	November 1993	Dev et al.	345/357
<input type="checkbox"/> <u>5289460</u>	February 1994	Drake, Jr. et al.	370/245
<input type="checkbox"/> <u>5394556</u>	February 1995	Oprescu	709/220
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<input type="checkbox"/> <u>5471474</u>	November 1995	Grobicki et al.	370/437
<input type="checkbox"/> <u>5537104</u>	July 1996	Van Dort et al.	340/825.52
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<input type="checkbox"/> <u>5687319</u>	November 1997	Cook et al.	370/256
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<input type="checkbox"/> <u>5734824</u>	March 1998	Choi	709/224
<input type="checkbox"/> <u>5737319</u>	April 1998	Croslin et al.	370/255
<input type="checkbox"/> <u>5742847</u>	April 1998	Knoll et al.	710/46
<input type="checkbox"/> <u>5751967</u>	May 1998	Raab et al.	395/200.58
<input type="checkbox"/> <u>5754789</u>	May 1998	Nowatzky et al.	709/233
<input type="checkbox"/> <u>5764930</u>	June 1998	Staats	710/107
<input type="checkbox"/> <u>5815082</u>	September 1998	Welmer	340/825.07
<input type="checkbox"/> <u>5828899</u>	October 1998	Richard et al.	710/8
<input type="checkbox"/> <u>5848367</u>	December 1998	Lotocky et al.	701/36
<input type="checkbox"/> <u>5923673</u>	July 1999	Henrikson	714/712
<input type="checkbox"/> <u>5973722</u>	November 1999	Wakai et al.	348/8
<input type="checkbox"/> <u>5991520</u>	November 1999	Smyers et al.	710/100

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Gary Hoffman et al.; IEEE 1394: A Ubiquitous Bus; Compcon '95, Technologies for the Information Superhighway, Digest of Papers; pp. 334-338, Mar. 1995.

Stephen Diamond; IEEE 1394: Status and Growth Path; IEEE Micro; vol. 16, Issue 3; pp. 75-78, Jun. 1996.

"A Bus on a Diet -The Serial Bus Alternative, An Introduction to the P1394 High Performance Serial Bus," Michael Teener, IEEE, Feb. 24, 1992, pp. 316-321.

"Design and Analysis of Arbitration Protocols," Fayer El Guibaly, IEEE Transactions on Computers, vol. 38, Feb. 3, 1989, pp. 161-171.

"Fair Arbitration Protocols For Communication Networks," Fayez Guibaly, Victoria, B.C.

"P1394 Standard for a High Performance Serial Bus," IEEE Standards Department, Piscataway, New Jersey, Jul. 7, 1995.

"The IEEE-1394 High Speed Serial Bus," R.H.J. Bloks, Philips Journal of Research, vol. 50, No 1/2, pp. 209-216.

ART-UNIT: 278

PRIMARY-EXAMINER: Maung; Zarni

ASSISTANT-EXAMINER: Coulter; Kenneth R.

ATTY-AGENT-FIRM: Haverstock & Owens LLP

ABSTRACT:

An automatic configuration system maps a device address of each node coupled to a bus structure to a network protocol address corresponding to the physical location of the node. A configuration database is built which includes the network protocol address of each node and its corresponding device address. A wiring database, including each device position within the network, is maintained within a network server. Preferably, the network is an IEEE 1394 serial bus network. A topology map, including the device addresses of the nodes within the network and their relationship to each other, is generated during a self-ID sequence and is maintained by the network server. This information is then compared to the wiring database by the network server in order to build a restored topology map including the corresponding device address for each device at each position. A DHCP database is then generated which includes each device address and its corresponding network protocol address. The network protocol address corresponds to the position of the respective device. Using the DHCP database, the network protocol address is maintained for the devices at each position, in order to monitor the positions of the devices and communications from the devices.

42 Claims, 9 Drawing figures

WEST

L4: Entry 11 of 15

File: USPT

Sep 15, 1998

DOCUMENT-IDENTIFIER: US 5809331 A

TITLE: System for retrieving configuration information from node configuration memory identified by key field used as search criterion during retrieval

Abstract Text (1):

A computer system comprises a plurality of nodes interconnected by point-to-point links and forms a serial bus. Upon system initialization, the bus is scanned and device-specific identification information is retrieved from command and status configuration ROMs associated with each of the plurality of nodes. In one embodiment, a search routine is used to retrieve the device specific information. The search routine begins with the definition of an iterator which is used as a place holder during the search. A simple search begins at the root directory of a hierarchical tree data structure and continues until all directories within the tree have been searched. In more complex embodiments, search relationships (i.e., direction) parameters are defined. Search criteria such as node spec.sub.-- ID and software version numbers are specified and the search is commenced. The search continues until all matching device specific information entries have been returned. The device specific information can be used to load and configure associated drivers for nodes.

WEST

L4: Entry 11 of 15

File: USPT

Sep 15, 1998

US-PAT-NO: 5809331

DOCUMENT-IDENTIFIER: US 5809331 A

TITLE: System for retrieving configuration information from node configuration memory identified by key field used as search criterion during retrieval

DATE-ISSUED: September 15, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Staats; Erik P.	Brookdale	CA		
Lash; Robin D.	Milpitas	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Apple Computer, Inc.	Cupertino	CA			02

APPL-NO: 08/ 626462 [PALM]

DATE FILED: April 1, 1996

INT-CL: [06] G06 F 13/00, G06 F 13/24, G06 F 13/36

US-CL-ISSUED: 395/830, 395/500, 395/872, 395/284, 395/681

US-CL-CURRENT: 710/10, 703/22, 709/321, 710/104, 710/52

FIELD-OF-SEARCH: 395/651, 395/681, 395/872, 395/830, 395/500, 395/284

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4020466</u>	April 1977	Cordi et al.	340/172.5
<u>5202986</u>	April 1993	Nickel	395/600
<u>5343471</u>	August 1994	Cassagnol	370/85.13
<u>5586268</u>	December 1996	Chen et al.	395/250
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<u>5630076</u>	May 1997	Saulpaugh et al.	395/284
<u>5713009</u>	January 1998	DeRosa, Jr. et al.	395/500

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ISO/IEC 13213 ANSI/IEEE Standard 1212, "Information Technology--Microprocessor Systems--Control and Status Registers (CSR) Architecture For Microprocessor Buses", First Edition, pp. 1-125, (Oct. 5, 1994).

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"Standard for a High Performance Serial Bus", IEEE 1394, Oct. 1995, pp. ii-364.

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Apple Computer, Inc., "Interim Draft, Designing PCI Cards and Drivers for Power Macintosh Computers", A8 Draft--Preliminary Information, pp. 1-372, (Mar. 9, 1995).

ART-UNIT: 272

PRIMARY-EXAMINER: Lee; Thomas C.

ASSISTANT-EXAMINER: Perveen; Rehana

ATTY-AGENT-FIRM: Blakely, Sokoloff, Taylor & Zafman

ABSTRACT:

A computer system comprises a plurality of nodes interconnected by point-to-point links and forms a serial bus. Upon system initialization, the bus is scanned and device-specific identification information is retrieved from command and status configuration ROMs associated with each of the plurality of nodes. In one embodiment, a search routine is used to retrieve the device specific information. The search routine begins with the definition of an iterator which is used as a place holder during the search. A simple search begins at the root directory of a hierarchical tree data structure and continues until all directories within the tree have been searched. In more complex embodiments, search relationships (i.e., direction) parameters are defined. Search criteria such as node spec.sub.-- ID and software version numbers are specified and the search is commenced. The search continues until all matching device specific information entries have been returned. The device specific information can be used to load and configure associated drivers for nodes.

12 Claims, 6 Drawing figures

WEST**Freeform Search**

Database:

Term:

Display: Documents in **Display Format:** Starting with Number

Generate: Hit List Hit Count Side by Side Image

Search History

DATE: Monday, August 04, 2003 [Printable Copy](#) [Create Case](#)

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
<i>DB=USPT; PLUR=YES; OP=OR</i>			
<u>L7</u>	5809331.uref.	16	<u>L7</u>
<i>DB=USPT,PGPB; PLUR=YES; OP=OR</i>			
<u>L6</u>	(4020466 5202986 5343471 5586268 5598563 5630076 5713009)![pn]	7	<u>L6</u>
<i>DB=PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>			
<u>L5</u>	L4	0	<u>L5</u>
<i>DB=USPT; PLUR=YES; OP=OR</i>			
<u>L4</u>	node same link same device same config\$7 same ROM	15	<u>L4</u>
<u>L3</u>	node same (link near5 device) same (config\$7 near5 ROM)	0	<u>L3</u>
<u>L2</u>	node same (link adj1 device) same (config\$7 adj1 ROM)	0	<u>L2</u>
<u>L1</u>	node near10 (link adj1 device) near10 (config\$7 adj1 ROM)	0	<u>L1</u>

END OF SEARCH HISTORY

(12) United States Patent
Hattig(10) Patent No.: US 6,466,549 B1
(45) Date of Patent: Oct. 15, 2002

(54) BROADCAST DISCOVERY IN A NETWORK HAVING ONE OR MORE 1394 BUSES

6,160,796 A * 12/2000 Zou 370/257

FOREIGN PATENT DOCUMENTS

EP 0854605 7/1998
EP 0874498 7/1998

• cited by examiner

Primary Examiner—Douglas Olms*Assistant Examiner*—Ken Vanderpuye

(74) Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman LLP

(75) Inventor: Myron P. Hattig, Portland, OR (US)
(73) Assignee: Intel Corporation, Santa Clara, CA (US)
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/290,356

(57) ABSTRACT

(22) Filed: Apr. 12, 1999

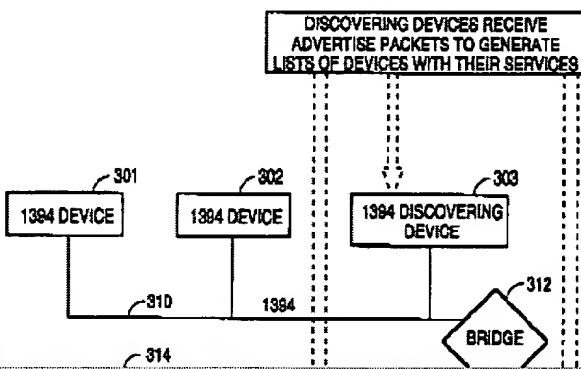
A method and apparatus for providing broadcast discovery in a network having one or more 1394 buses is disclosed. Devices connected to a bus generate advertised discovery information upon either a reset of the bus or a receipt of a solicit packet sent to all devices in the network by a discovering device. The devices generate the advertised discovery information upon the receipt of the solicit packet if the solicit packet contains either a global bus identifier or a bus identifier associated with the bus to which the devices are connected. The discovering device receives the advertised discovery information sent by the devices. Based on the advertised discovery information, the discovering device maintains a list of devices and services included within the devices.

(51) Int. Cl.⁷ H04L 12/40
(52) U.S. Cl 370/254; 370/257
(58) Field of Search 370/254, 257,
370/255, 453, 457; 379/102,03

(56) References Cited

20 Claims, 5 Drawing Sheets

U.S. PATENT DOCUMENTS

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5,815,678 A * 9/1998 Hoffman et al.
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5,937,175 A * 8/1999 Sesilia
6,101,528 A * 8/2000 Butt 709/203

(12) United States Patent
Sato(10) Patent No.: US 6,185,622 B1
(45) Date of Patent: Feb. 6, 2001

(54) ELECTRONIC APPARATUS,
COMMUNICATION SPEED INFORMATION
COLLECTION METHOD,
COMMUNICATION METHOD BETWEEN
ELECTRONIC APPARATUS AND
RECORDING MEDIUM

(75) Inventor: Makoto Sato, Tokyo (JP)

(73) Assignee: Sony Corporation, Tokyo (JP)

(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

(21) Appl. No.: 09/037,392

(22) Filed: Apr. 8, 1998

(30) Foreign Application Priority Data

Apr. 15, 1997 (JP) 9-096873

(51) Int. Cl.⁷ G06F 13/00

(52) U.S. Cl. 709/233

(58) Field of Search 709/200, 232, 709/233, 328

(56) References Cited

U.S. PATENT DOCUMENTS

6,038,625 • 3/2000 Ogino et al. 710/104

* cited by examiner

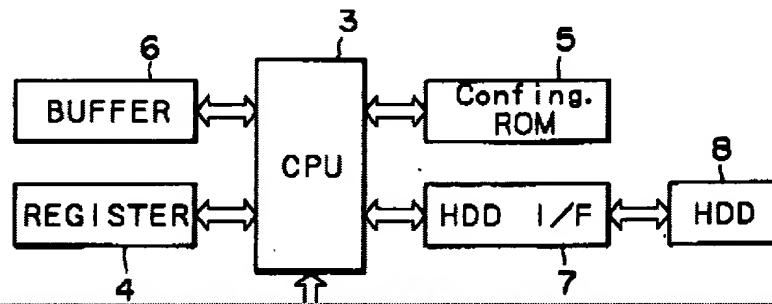
Primary Examiner—Robert B. Hanell

(74) Attorney, Agent, or Firm—Frommer Lawrence & Haug, LLP; William S. Frommer

(57) ABSTRACT

The invention provides an electronic apparatus, a communication speed information collection method, a communication method between electronic apparatus and a recording medium which can minimize the possibility of drop of a communication speed by a performance of a repeating node and by which communication speed information having a high degree of reliability can be obtained. When bus resetting occurs, a parental relationship of nodes is determined automatically, and the nodes send out self ID packets in a predetermined order to a 1,394 serial bus. One of the nodes which has been determined as a bus manager produces a speed map using maximum communication speed information of physical layer controllers written in the self ID packets sent out from the nodes. Then, the node reads out configuration ROMs of the other nodes and modifies the information regarding any node wherein the maximum communication speed of the link layer controller is lower than the maximum communication speed of the physical layer controller.

16 Claims, 5 Drawing Sheets



WEST

L1: Entry 2 of 29

File: USPT

Mar 11, 2003

DOCUMENT-IDENTIFIER: US 6530887 B1

TITLE: Ultrasound probe with integrated electronics

Detailed Description Text (61):

The Adaptec device drivers send Asynchronous Read Requests in response to explicit application requests as well as to interrogate the node's FireWire configuration ROM in response to a SendPAPICommand of P_GET_DEV_INFO or after a bus reset or when an application tries to obtain a handle to a node.

Detailed Description Text (67):

The FireWire specification expects each FireWire node to have a configuration ROM that contains various details about the device, its requirements, and its capabilities. This ROM is to be queried via Read Request packets. There are two types of ROM implementations: a minimal ROM and a general ROM. The former has only one quadlet (4-byte) piece of data indicating a 24-bit vendor ID. The general ROM has many other fields, and many which are optional ranging from the ASCII name of the vendor and device to its power consumption and how to access its capabilities.

Detailed Description Text (68):

One of the required fields in a general ROM is a node unique ID. This consists of the 24-bit vendor ID and a 40-bit chip ID. The 40-bit chip-ID is up to the vendor to assign such that all nodes have unique values. The node unique ID's are required to keep a consistent handle on the device if the FireWire bus is reset or reconfigured during operation. When a device is first opened, the application reads its configuration ROM and determines if it wants to work with it. If so it records its node unique ID and opens a connection to the device via that node unique ID. This is then at any given time mapped to its FireWire ID (16-bit) by the host adapter and its device driver. If the topology changes or a FireWire bus reset occurs, the node's FireWire ID can change, however the node unique ID will not. Thus, in such an event, the adapter automatically determines the new FireWire ID and continues. Thus for smooth operation, particularly with multiple heads attached to the system, implementing node unique IDs and the configuration ROM is required.

configuration ROM shown in FIG. 11, of which the unit directory 1103 is constructed as shown in FIG. 13.

Detailed Description Text (94) :

Also in case the user initiates the communication with the printer 902 or with a predetermined device on the communication system by manipulating the control unit 305, the digital camera 901 sends, by wireless transmission, information relating to the function of the digital camera 901 to the printer 902. The function information which is wireless transmitted from the digital camera 901 is received by the wireless interface 309 and is supplied to the printer controller 317. The printer controller 317 converts the function information of the digital camera 901 into data based on the IEEE 1394 standard and stores such data in the second area 1302 of the configuration ROM provided in the 1394 interface 1202. After such storage of the function information of the digital camera 901 in the second area 1302, the printer controller 317 requests, to the 1394 interface 1202, execution of bus resetting. The 1394 interface 1202 outputs a signal, indicating the start of bus resetting, to the communication system, and executes ID setting for the device constituting the communication system and rerecognition of the connection configuration. After the bus resetting, the device on the communication system can judge the function of the printer 902 and the supported communication protocol by reading the information stored in the first and second areas 1301, 1302 of the unit directory 1103 of the printer 902. In this manner the communication system can recognize the digital camera 901 and the printer 902 as a single device, or the printer 902 itself as a compound device having the function of the digital camera.

Detailed Description Text (100) :

The image processing unit 312 decodes the JPEG compression encoded image data, utilizing a JPEG decoding program file stored in an unrepresented ROM or decoding data transmitted from the digital camera 901 together with the compressed image data. Also the image processing unit 312 converts the decoded image data into a data format, suitable for printing, utilizing the memory 313 and stores the converted data in the memory 313. The image data stored in the memory 313 are supplied to the printer head 216 and printed therein.

Detailed Description Text (125) :

The memory medium for supplying the program codes may be composed, for example, of a floppy disk, a hard disk, an optical disk, a magnetooptical disk, a CD-ROM, a CD-R, a magnetic tape, a non-volatile memory card or a ROM.

WEST**End of Result Set** [Generate Collection](#) [Print](#)

L1: Entry 1 of 1

File: USPT

Mar 4, 2003

DOCUMENT-IDENTIFIER: US 6529522 B1

TITLE: Communication apparatus with digital interface

US Patent No. (1):
6529522Drawing Description Text (11):FIG. 11 is a view showing the structure of a configuration ROM provided in the 1394 interface;Drawing Description Text (13):FIG. 13 is a view showing the configuration of a unit directory in the configuration ROM, andDetailed Description Text (33):The image processing unit 312 decodes the image data, subjected to the JPEG compression encoding, utilizing a JPEG decoding program file stored in an unrepresented ROM or decoding data transmitted from the digital camera 201 together with the compressed image data. Also the image processing unit 312 converts the decoded image data into a data format, suitable for printing, utilizing the memory 313 and stores the converted data in the memory 313. The image data stored in the memory 313 are supplied to the printer head 216 and printed therein.Detailed Description Text (79):An initial area of 512 kbytes in the register space becomes the nucleus of the known CRS (control and status register) architecture. The register space further includes a configuration ROM of 1024 bytes and a unit space for storing information specific to each device.Detailed Description Text (80):The configuration ROM is constructed for example as shown in FIG. 11 for representing the function of each node. A bus information block 1101 stores a company ID, indicating the supply company of each device. A route directory 1102 stores information specific to each device and the storage position of a next unit directory 1103, which stores control/status information relating to the function of each device, and control/status information on the communication protocol supportable by each device in hierachic manner. Each device can judge the function provided therein and the supported communication protocol by reading the content of the unit directory 1103.Detailed Description Text (86):Referring to FIG. 12, the digital camera 901 is composed of an image pickup unit 301, an image processing unit 302, an encoding/decoding unit 303, a recording/reproducing unit 304, an operation unit 305, a control unit 306, a display unit 307, a wireless interface 308 and a ROM 1201. The ROM 1201 stores information relating to the function of the digital camera 901. At the start of communication with the printer 902, the control unit 306 reads the information data stored in the ROM 1201 and sends such data to the printer 902 by wireless communication.Detailed Description Text (88):

Also in the second embodiment, the 1394 interface 1202 is provided therein with a

WEST

L1: Entry 4 of 29

File: USPT

Mar 4, 2003

DOCUMENT-IDENTIFIER: US 6529522 B1

TITLE: Communication apparatus with digital interface

Detailed Description Text (80):

The configuration ROM is constructed for example as shown in FIG. 11 for representing the function of each node. A bus information block 1101 stores a company ID, indicating the supply company of each device. A route directory 1102 stores information specific to each device and the storage position of a next unit directory 1103, which stores control/status information relating to the function of each device, and control/status information on the communication protocol supportable by each device in hierarchic manner. Each device can judge the function provided therein and the supported communication protocol by reading the content of the unit directory 1103.

WEST

 Generate Collection

L1: Entry 4 of 29

File: USPT

Mar 4, 2003

US-PAT-NO: 6529522

DOCUMENT-IDENTIFIER: US 6529522 B1

TITLE: Communication apparatus with digital interface

DATE-ISSUED: March 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ito; Masamichi	Machida			JP
Takahashi; Koji	Chigasaki			JP
Yamashita; Hiroki	Yokohoma			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 09/ 041122 [PALM]

DATE FILED: March 12, 1998

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	9-057606	March 12, 1997
JP	10-051954	March 4, 1998

INT-CL: [07] H04 L 12/46

US-CL-ISSUED: 370/466, 370/401, 370/467

US-CL-CURRENT: 370/466, 370/401, 370/467

FIELD-OF-SEARCH: 370/401, 370/402, 370/419, 370/420, 370/421, 370/463, 370/466, 370/467, 370/468, 370/485, 370/486, 370/487, 370/489, 370/490, 370/545, 370/453, 709/249

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> 5563886	October 1996	Kawamura et al.	370/466
<input type="checkbox"/> 6157650	December 2000	Okuyama et al.	370/401

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0254565	January 1988	EP	
0537061	April 1993	EP	
0619662	October 1994	EP	

OTHER PUBLICATIONS

IEEE Std 1394-1995, "IEEE Standard for a High Performance Serial Bus", The Institute of Electrical And Electronics Engineers, Inc., IEEE Computer Society, Aug. 30, 1996, p. 1-172 (complete copy of standard).

ART-UNIT: 2664

PRIMARY-EXAMINER: Chin; Wellington

ASSISTANT-EXAMINER: Duong; Frank

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

The communication apparatus is equipped with a first communication interface for executing communication based on a first communication method, and a second communication interface for executing communication based on a second communication method different from the first communication method. The communication apparatus sets ID information for identifying device executing communication by the first communication method, for device which executes communication with the second communication interface.

In this manner plural device supporting different communication methods can be recognized as device belonging to a same communication system.

16 Claims, 14 Drawing figures

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 11 returned.**

1. Document ID: US 6529951 B1

L4: Entry 1 of 11

File: USPT

Mar 4, 2003

US-PAT-NO: 6529951

DOCUMENT-IDENTIFIER: US 6529951 B1

TITLE: Apparatus for transmitting connecting status and method of displaying connecting status

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC
Draw Desc Image											

2. Document ID: US 6425019 B1

L4: Entry 2 of 11

File: USPT

Jul 23, 2002

US-PAT-NO: 6425019

DOCUMENT-IDENTIFIER: US 6425019 B1

TITLE: Data communication on a serial bus using an initial protocol which being executed in a transaction layer

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC
Draw Desc Image											

3. Document ID: US 6334161 B1

L4: Entry 3 of 11

File: USPT

Dec 25, 2001

US-PAT-NO: 6334161

DOCUMENT-IDENTIFIER: US 6334161 B1

** See image for Certificate of Correction **

TITLE: System for reverse data transmission flow control wherein command is transferred by asynchronous transfer mode while data is transferred by isochronous transfer mode

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC
Draw Desc Image											

4. Document ID: US 6237049 B1

L4: Entry 4 of 11

File: USPT

May 22, 2001

US-PAT-NO: 6237049

DOCUMENT-IDENTIFIER: US 6237049 B1

TITLE: Method and system for defining and discovering proxy functionality on a distributed audio video network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Drawn Desc Image											

5. Document ID: US 6160796 A

L4: Entry 5 of 11

File: USPT

Dec 12, 2000

US-PAT-NO: 6160796

DOCUMENT-IDENTIFIER: US 6160796 A

TITLE: Method and system for updating device identification and status information after a local bus reset within a home audio/video network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC	
Drawn Desc Image											

6. Document ID: US 6141767 A

L4: Entry 6 of 11

File: USPT

Oct 31, 2000

US-PAT-NO: 6141767

DOCUMENT-IDENTIFIER: US 6141767 A

TITLE: Method of and apparatus for verifying reliability of contents within the configuration ROM of IEEE 1394-1995 devices

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC	
Drawn Desc Image											

7. Document ID: US 6038625 A

L4: Entry 7 of 11

File: USPT

Mar 14, 2000

US-PAT-NO: 6038625

DOCUMENT-IDENTIFIER: US 6038625 A

TITLE: Method and system for providing a device identification mechanism within a consumer audio/video network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC	
Drawn Desc Image											

8. Document ID: US 6038617 A

L4: Entry 8 of 11

File: USPT

Mar 14, 2000

US-PAT-NO: 6038617

DOCUMENT-IDENTIFIER: US 6038617 A

TITLE: Auto configuration of a serial ROM by sensing an output of the serial ROM after transmission of a read instruction and an x-bit address to it's input

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KOMC

9. Document ID: US 5968152 A

L4: Entry 9 of 11

File: USPT

Oct 19, 1999

US-PAT-NO: 5968152

DOCUMENT-IDENTIFIER: US 5968152 A

TITLE: Method and apparatus for extending key space in a plug and play ROM

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KOMC

10. Document ID: US 5809331 A

L4: Entry 10 of 11

File: USPT

Sep 15, 1998

US-PAT-NO: 5809331

DOCUMENT-IDENTIFIER: US 5809331 A

TITLE: System for retrieving configuration information from node configuration memory identified by key field used as search criterion during retrieval

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KOMC

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Terms	Documents
l1 and L3	11

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